PLATFORM ONE

Platform One

A DoD-wide Path to Accreditation of COTS or GOTS software via DevSecOps

November 2021

DoD Continually Falls Behind Adversaries in Software

Yet... **all** modern DoD systems including weapon systems are **software**-intensive systems

Build → Learn → Build ... **takes too long**...

Fielding **simplest, useful** function	3 – 5 yrs
Testing complete system against side-effects	2 yrs
Testing cybersecurity via audit/penetration	2 yrs
Fielding **high priority** function	1 – 5 yrs
Fixing **security** holes	1 – 18 mos
Publishing software to use	1 – 18 mos

Months | Years

...and we **still fail**

94%
Failed projects
over $10M*

43%
Utter and
Complete
Failures

51%
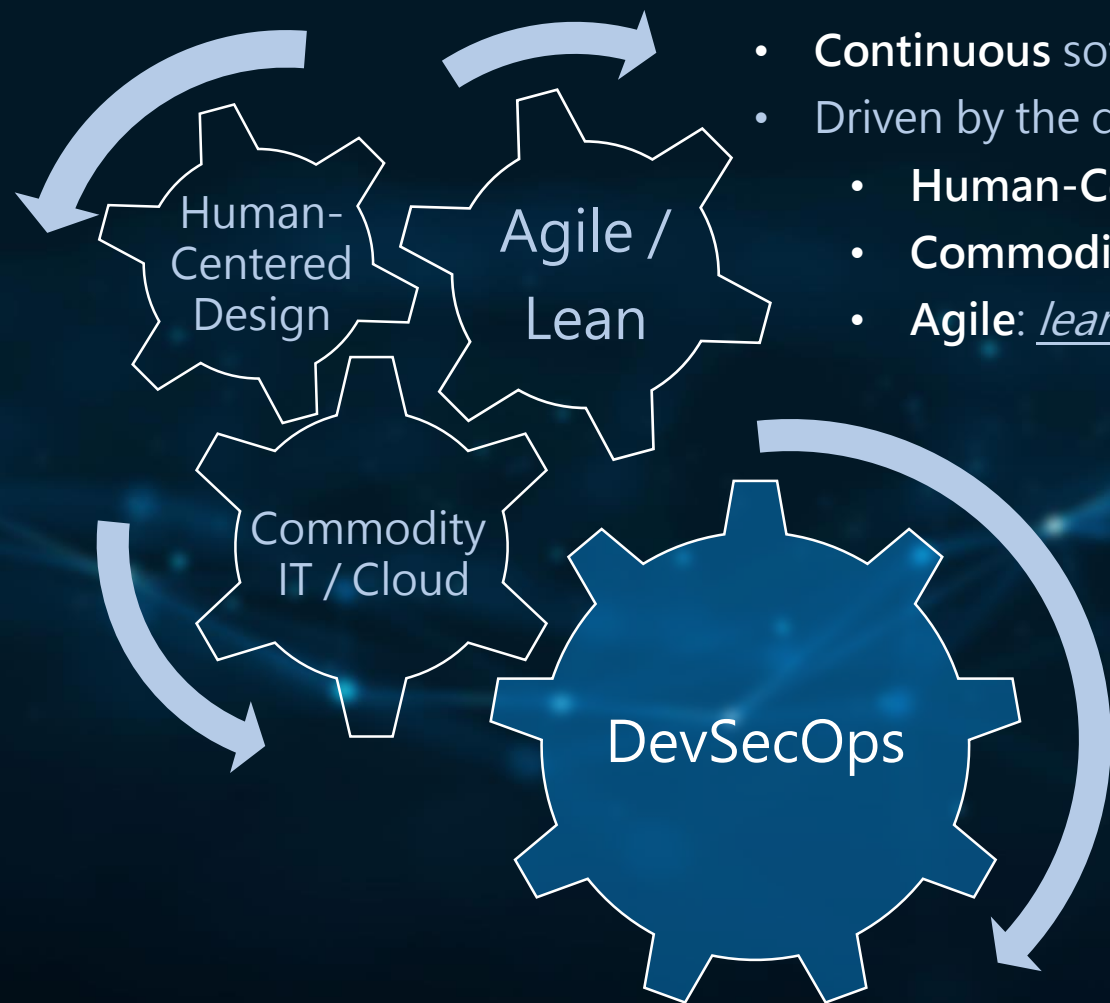Failed Expectations
Over Budget
Behind Schedule

*Standish Group CHAOS report

All modern DoD systems including weapon systems are software-intensive systems

What is DevSecOps?

- **Continuous** software development with ops/sustainment w/security throughout
- Driven by the convergence of:
  - **Human-Centered Design** (HCD): a humanistic way to learn and work
  - **Commodity IT**: cheap, ubiquitous infrastructure = low-barrier of entry
  - **Agile**: *learning fast* to find solutions for complex/ill-defined challenges

Human-Centered Design

Agile / Lean

Commodity IT / Cloud

DevSecOps
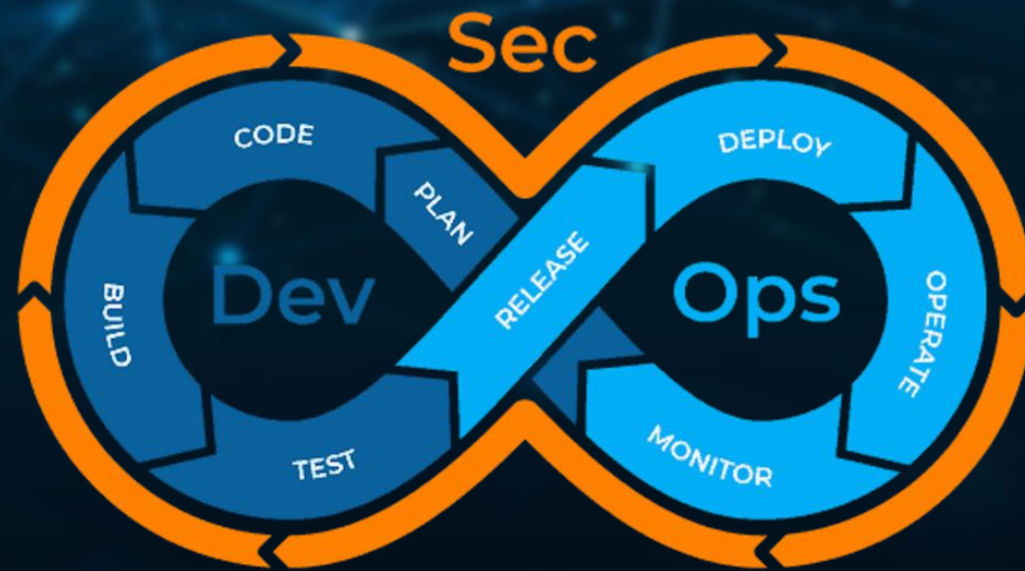
Agile Private Sector vs. Waterfall DoD

| Metric	Private Sector (SpaceX)	DoD (F-35)
Vehicles	9	1 (with several variants)
Developers	200	4,000
Code Reuse Rate (Vehicles/Platforms)	80%	5%
Software Update Time	Day prior to launch	7 years (on average)
Software Builds (Daily)	17,000	Not capable today
Hardware-in-the-Loop (HIL) Tests (Daily)	3	Not capable today
Technology Used	Containers	GOTS and closed IP from Primes

Accelerate Solutions with **DevSecOps**

Build → Learn → Build → *Win*

Hours / Days
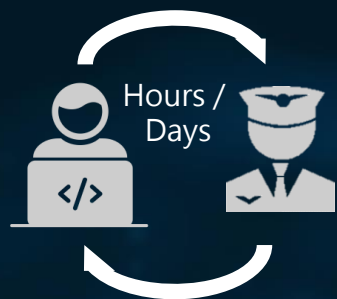
Bring **developers** and **operators** together...

DevSecOps

...with **trusted leading edge technology**

- Apps written and operated on Platform One

- Coordinated **100** crew members on **25** C-17s, **10** KC-10s, **18** commercial planes

- Evacuated **124,000** noncombatants from Afghanistan

"The massive inflow of information and coordination issues could not have been managed without the collaboration capabilities provided by Mattermost." — Afghan Ops Theater Direct Delivery section

Platform One: Why, How, What

MISSION

Guide, empower, equip, and **accelerate** DoD program offices and weapon system through their **DevSecOps** journeys

VISION

Fundamentally **transform** how the **DoD** delivers secure software at speed through DevSecOps **culture, process**, and **technology**

Mission Apps

DevSecOps Platforms

DevSecOps Capabilities

Infrastructure

Secure & Connect Users

Cloud Native Access Point provides **zero-trust security** for development, test, and production enclaves

Harden & Store Components

DoD repository of **hardened binary container images** approved for DoD-wide use across enclaves

Build & Deploy Platforms

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BIG BANG

Infrastructure as Code (IaC) and Configuration as Code (CaC) deployable to cloud or on-premise infrastructures

Code & Operate Apps
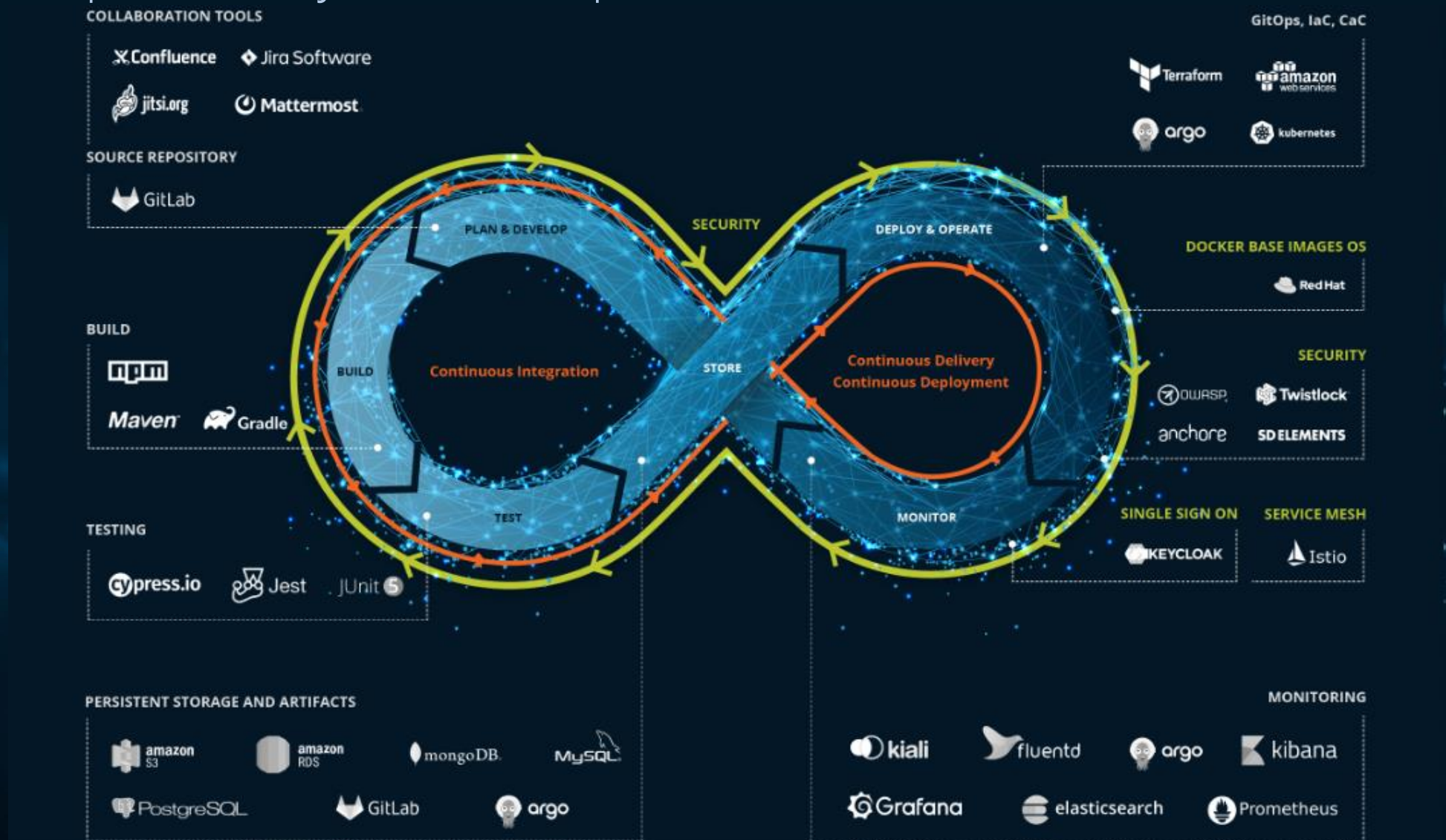
DevSecOps Platform-as-a-Service at IL-2 to IL-4 accredited and managed by Platform One

Complex Ecosystem of Open Source and Commercial Technology

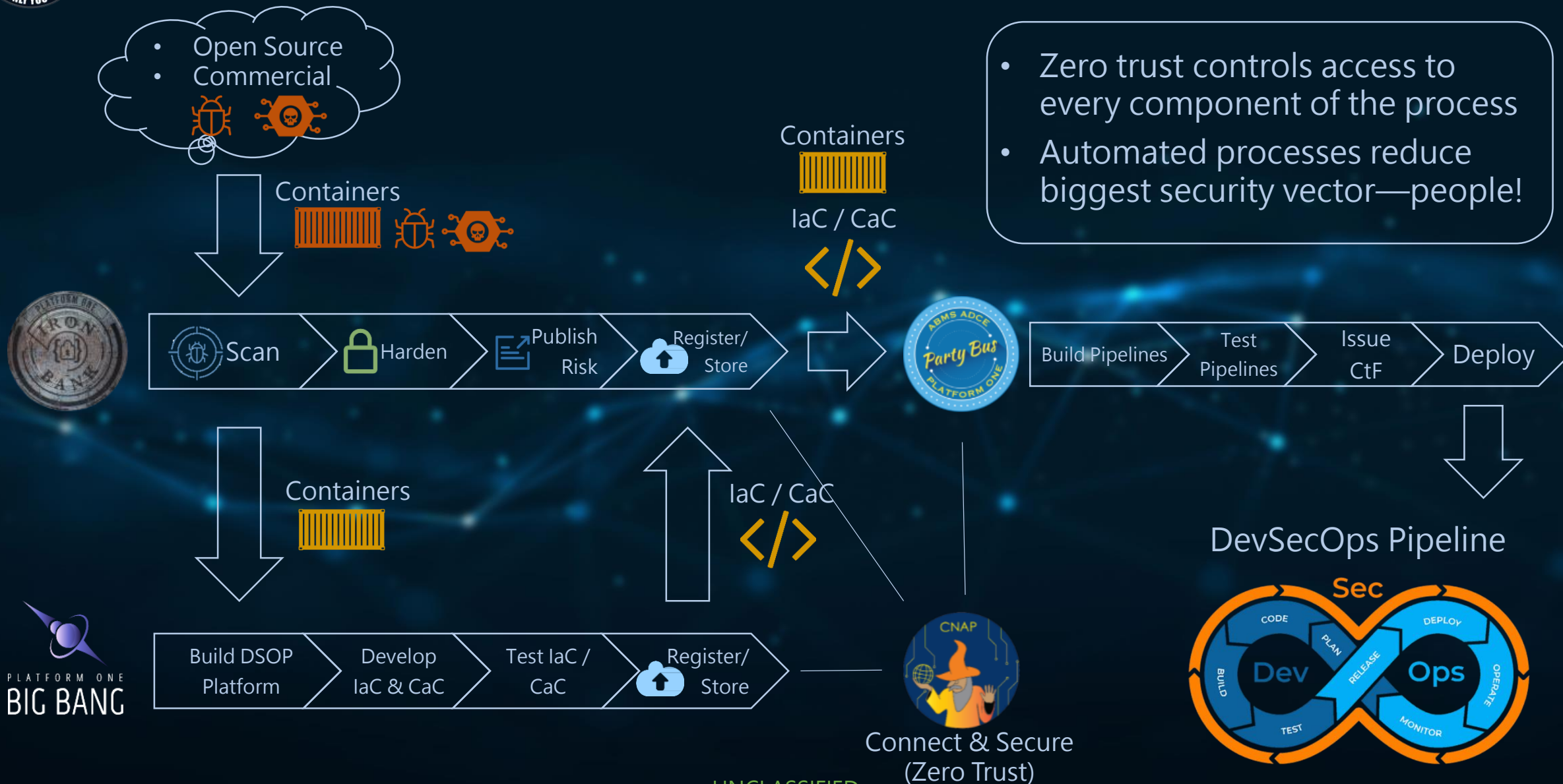**Complex Ecosystem → Platform Talent Biggest Constraint**

Cybersecurity: Building Trust throughout the Supply Chain

- Open Source
- Commercial

Containers

Containers

IaC / CaC

- Zero trust controls access to every component of the process
- Automated processes reduce biggest security vector—people!

Scan > Harden > Publish Risk > Register/Store

Party Bus
ABMS ADCE
PLATFORM ONE

Build Pipelines > Test Pipelines > Issue CtF > Deploy

Containers

IaC / CaC

DevSecOps Pipeline

Sec
Dev Ops

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Build DSOP Platform > Develop IaC & CaC > Test IaC / CaC > Register/Store

CNAP

Connect & Secure
(Zero Trust)

By the Numbers

As of September 2021

Collaboration Tools
28,268 Daily Users

Connected Devices / Apps
- IL2 - **284,300**
- IL4 - **114,771**
- IL5 - **510**

861 Containers Hosted

230
P1 Personnel
14 military, 12 civilian
12 A&AS, 4 FFRDC
188 Vendors

PLATFORM ONE BIG BANG
15 Deployed Platforms

Air Force + Army + Navy + Joint Customers
- Ground-Based Strategic Deterrent
- Unified Platform, Black Label
- Global Positioning System OCX
- Edge ONE
- Weapon ONE
- 76th Software Engineering Group
- U2 Federal Labs

- Advanced Battle Mgt System
- Army INSCOM
- Navy COLUMBIA Sub Program
- Navy Black Pearl
- F-35 Joint Program Office
- Joint Artificial Intelligence Center
- NCCT

34 average times P1 publishes software updates per day

ABMS ADCE Party Bus PLATFORM ONE

2,808 Customer App Developers

27 Average Days for Certificate to Field

192 Customer App Teams

55 Customer Production Apps

Platform One: Airmen Solving Airmen's Problems

...because the Status Quo is Not OK

$$[\text{Agile Speed} + \text{Leading Edge Tech} + \text{Innovative Acquisitions}] \times \text{Culture}$$

Value diversity through **inclusion** means appreciating unique characteristics of **people, ideas, and solutions.**

Nourish **open, safe, candid** discussions to invite and celebrate **collaboration** at all levels

Empathize with our **users** and solve their challenges by **delivering** actual, **functional solutions**

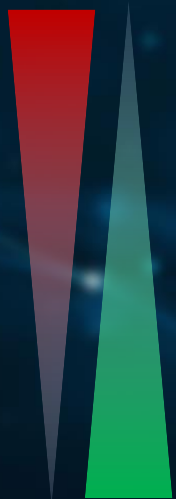**Empower individuals and teams** with the trust to be make decisions and be accountable
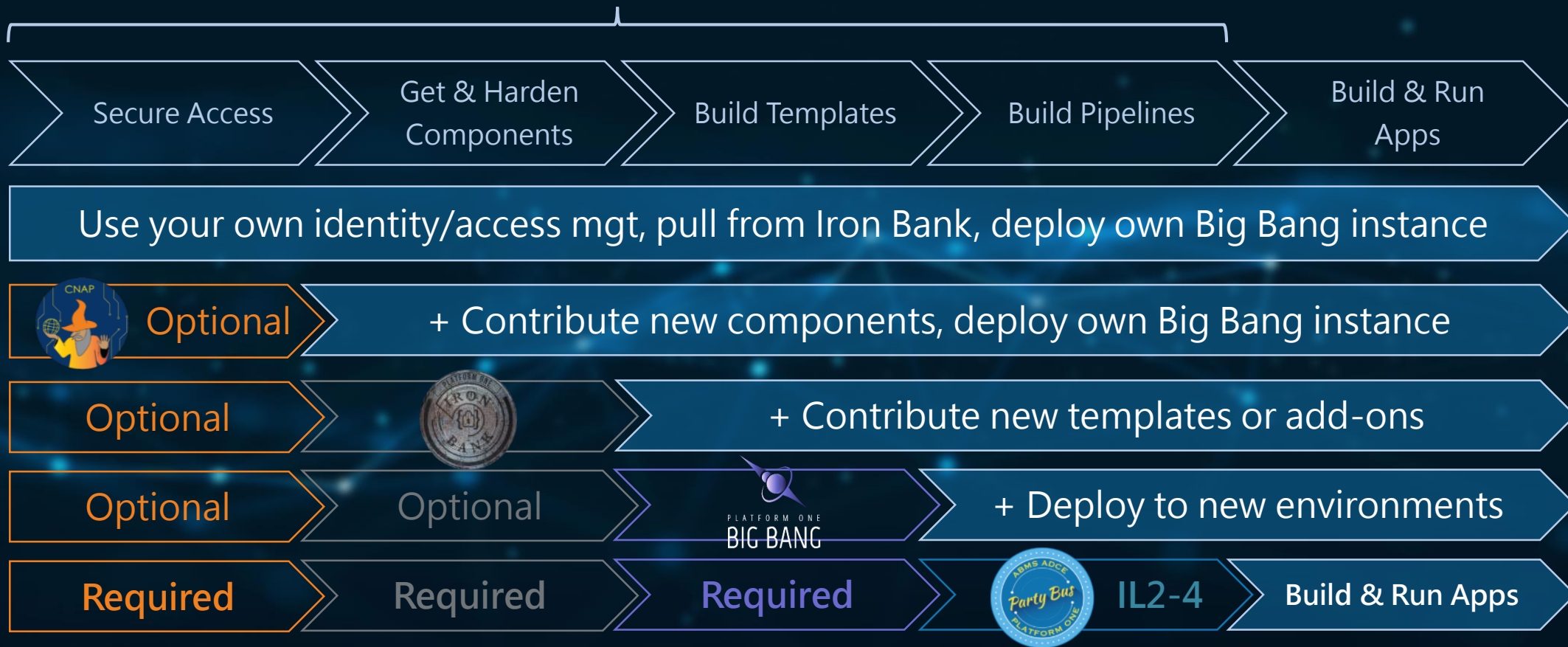
Tailor Options and Contribute to the DoD Open Source

Changes requires organization to get their own authority to operate or certificate to field

Higher Control
Higher Cost
Lower Focus

Secure Access	Get & Harden Components	Build Templates	Build Pipelines	Build & Run Apps

Use your own identity/access mgt, pull from Iron Bank, deploy own Big Bang instance

Optional → + Contribute new components, deploy own Big Bang instance

Optional → + Contribute new templates or add-ons

Optional → Optional → + Deploy to new environments

Required → Required → Required → IL2-4 → Build & Run Apps

Lower Control
Lower Cost
Higher Focus

- Pick and choose what exists, add anything else, get your own ATO and CTF
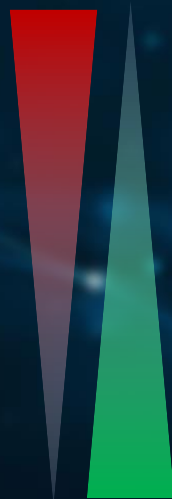- Core changes to CNAP, IB, or BB will affect everyone and is subject to P1 approval

DevSecOps **Options** for the Organization

Changes requires organization to get their own authority to operate or certificate to field

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Higher Cost
Lower Focus

Secure Access	Get & Harden Components	Build Templates	Build Pipelines	Build & Run Apps

Do It All Yourself

Optional — **Focus on Components**

Optional — **Focus on Pipeline Templates**

Optional — Optional — BIG BANG — **Focus on New Environments**

Lower Control
Lower Cost
Higher Focus

Required — Required — Required — Party Bus — IL2-4 — **Focus on Apps**

1. Start one or a combination of options that gets your apps to your users that quickest
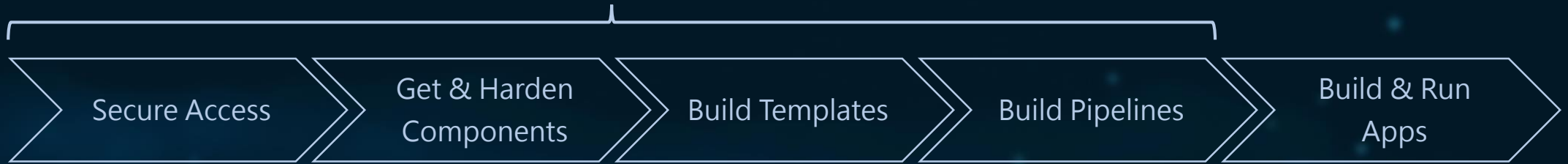2. Evolve to other options as your needs grow, talent matures, and/or funding increases

DevSecOps **Options** for the Organization

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Higher Cost
Lower Focus

| Secure Access | Get & Harden Components | Build Templates | Build Pipelines | Build & Run Apps |

1. This option requires you to have Govt Funding and adhere to Platform One Standards
2. Connect with our Customer Success team at PlatformOne@afwerxpartner.com
3. Our service catalog: Platform One | Products | Party Bus | Service Catalog (dso.mil)
4. Learn more: https://auth.galvanize.com/register?uid=fbc9761c8f97c752ea
This is a link for the self paced free training

| Required | Required | Required | Party Bus IL2-4 | Focus on Apps |

Lower Control
Lower Cost
Higher Focus

Questions?

Comments?